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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/589,970	08/18/2006	Takanori Maeda	295154US0PCT	2433
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OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, P.C. 1940 DUKE STREET ALEXANDRIA, VA 22314				
EXAMINER				
GREENE, JASON M				
ART UNIT		PAPER NUMBER		
1797				
NOTIFICATION DATE		DELIVERY MODE		
04/06/2009		ELECTRONIC		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary

Application No.

10/589,970

Applicant(s)

MAEDA ET AL.

Examiner

Jason M. Greene

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 18 August 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO/SE/US)
Paper No(s)/Mail Date 8/18/06
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date ____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: ____

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1 and 2 are rejected under 35 U.S.C. 102(a) or 102(b) as being anticipated by Japanese Patent Application Publication JP 2004-57993.

Applicant cannot rely upon the foreign priority papers to overcome this rejection under 35 USC 102(b) because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15. Additionally, a back-up rejection under 35 USC 102(a) is made in case such papers are made of record.

JP 2004-57993 discloses a hydrogen-purification membrane comprising a porous support substrate having a plurality of pores (33) and a Pd alloy film (36) joined to at least one surface of the porous support substrate, wherein each pore in the porous

support substrate is configured to have a narrowest portion (33a) ($D3 = 70\text{ }\mu\text{m}$) therein, between a thickness T ($50\text{ }\mu\text{m}$) of the porous support substrate, an opening diameter $D1$ ($120\text{ }\mu\text{m}$) of each pore on a side joined to the Pd alloy film and an opening diameter $D2$ ($120\text{ }\mu\text{m}$) of the pore on the opposite side, $D1/T = 2.4$, $D2/T = 2.4$, $D3/D1 = 0.58$ and $D3/D2 = 0.58$ such that the recited relations are satisfied, and a total opening area of the pores on the side joined to the Pd alloy film accounts for 10-50% of an area of the porous support substrate, and wherein the Pd alloy film has a thickness of $8\text{ }\mu\text{m}$ in Figs. 3(A)-3(D), the English language abstract and paragraphs [0005] to [0021] of the English language machine translation.

3. Claims 5-9 are rejected under 35 U.S.C. 102(b) or 102(a) as being anticipated by Japanese patent application publication JP 2004-57993.

Applicant cannot rely upon the foreign priority papers to overcome this rejection under 35 USC 102(b) because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15. Additionally, a back-up rejection under 35 USC 102(a) is made in case such papers are made of record.

JP 2004-57993 discloses a hydrogen-purification membrane production process comprising a resist-formation step of forming a resist pattern (34a) having a plurality of openings on a front surface of an electrically conductive support substrate (32), and forming on a back surface of the support substrate a resist pattern (34b) having a plurality of openings in alignment with the openings in the first resist pattern, an etching step of etching the support substrate from front and back sides thereof using the resist

patterns as masks to make a porous support having a plurality of pores and satisfying the relations recited in claim 1, a filling step of applying an insulating film (14) onto the back surface side of the support substrate, and forming a plating layer (15) on the porous support substrate from the front surface side thereof by electrolytic plating in such a way as to fill in the pores, a film-formation step of removing the insulating film, polishing the plating layer in such a way as to expose the front surface of the porous support substrate, and forming a Pd alloy film (16 or 36) on the thus polished surface side by electrolytic plating, and a removal step of removing the plating layer and the electrically conductive undercoat layer from the back surface side of the porous support substrate by means of selective etching, wherein at the film-formation step, thin films of individual components that form the Pd alloy film are first stacked by plating, and heat treatment is then applied to the stack to form the Pd alloy film by component diffusion, and wherein at the film-formation step, a strike plating layer is formed on the polished surface side, and the Pd alloy film is then formed, while the strike plating layer is removed by selective etching at the removal step in Figs. 1(A)-3(D), the English language abstract and paragraphs [0005] to [0036] of the English language machine translation.

4. Claims 3 and 4 are rejected under 35 U.S.C. 102(a) or 102(e) as being anticipated by Yagi et al. (US 2004/0245191 A1).

Applicant cannot rely upon the foreign priority papers to overcome this rejection under 35 USC 102(a) because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Yagi et al. discloses a hydrogen-purification membrane comprising a porous support substrate having a plurality of pores (54) and a Pd alloy film (65) joined to at least one surface of the porous support substrate, wherein between a thickness T (150 μm) of the porous support substrate, an opening diameter $D1$ (390 μm) of each pore on a side joined to the Pd alloy film and an opening diameter $D2$ (100 μm) of the pore on an opposite side, where $D1/T = 2.6$ and $D2/D1 = 0.26$, such that the recited relations are satisfied, and a total opening area of the pores on the side joined to the Pd alloy film accounts for 10-50% of an area of the porous support substrate, and wherein the Pd alloy film has a thickness of 3 μm in Figs. 9(a)-12(c) and paragraphs [0036] to [0228], Especially Example 6 at paragraphs [0179]-[0203].

5. Claims 11-15 are rejected under 35 U.S.C. 102(a) or 102(e) as being anticipated by Yagi et al. (US 2004/0245191 A1).

Applicant cannot rely upon the foreign priority papers to overcome this rejection under 35 USC 102(a) because a translation of said papers has not been made of record in accordance with 37 CFR 1.55. See MPEP § 201.15.

Yagi et al. discloses a hydrogen-purification membrane production process according to the recited claims, including where the substrate satisfies the relations

recited in claim 3 in Figs. 9(a)-12(c) and paragraphs [0036] to [0228], Especially Example 6 at paragraphs [0179]-[0203].

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 10 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Japanese Patent Application Publication JP 2004-57993 or Yagi et al. (US 2004/0245191 A1), respectively, in view of Japanese Patent Application Publication 5-76738.

JP 2004-57993 and Yagi et al. not teach, at the film-formation step, a diffusion-preventative layer being formed on the polished surface side of the by electrolytic plating or electroless plating, and the Pd alloy is then formed, while the diffusion-preventative layer is removed by selective etching at the removal step.

However, JP 5-76738 teaches a similar method wherein a diffusion-preventative layer is applied to prevent mutual diffusion and prevent deterioration of the membrane in the English language abstract.

Conclusion

8. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The Takatani et al., Kawae et al., Dalton et al. and Saijo et al. references disclose similar systems.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jason M. Greene whose telephone number is (571) 272-1157. The examiner can normally be reached on Monday - Friday (9:00 AM to 5:30 PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Duane Smith can be reached on (571) 272-1166. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Jason M. Greene
Primary Examiner
Art Unit 1797

/Jason M. Greene/
3/29/09

jmg
March 29, 2009